Fisheries Mitigation and Monitoring Plan Report - 2025

Coastal Virginia Offshore Wind – Commercial Project

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Acknowledgments

Sample collection and analysis efforts were supported by equipment and personnel of Virginia Institute of Marine Science (VIMS), Rutgers University, and commercial fishing crews of R/V Bay Eagle, R/V Virginia, F/V Joey D, F/V Lady Isla, F/V Second to None and F/V Thomas Reed. Sea Risk Solutions staff were vital in coordination of efforts and communication. Tetra Tech Inc. assisted in developing the monitoring plan and GIS products. VIMS, Sea Risk Solutions, and Dominion Energy collaborated in development of this report.

Executive Summary

Virginia Electric and Power Company, d/b/a Dominion Energy Virginia (Dominion Energy), submits this update in accordance with the Virginia Marine Resources Commission (VMRC) Protection of Coastal Zone Resources Memorandum of Agreement (MOA) Section B in support of development of the Coastal Virginia Offshore Wind Commercial Project (the Project). This report summarizes implementation of the Fisheries Mitigation and Monitoring Plan (FMMP) as described in the Construction and Operations Plan (COP) Appendix V-2, approved by the Bureau of Ocean Energy Management (BOEM) on January 28, 2024.

There has been a total of 36 transits in support of fisheries monitoring surveys through the reporting period of January 01, 2025 to June 30, 2025, with a total of 1,021 pots deployed. There were no observations of Endangered Species Act (ESA)-listed species by crews during these monitoring activities.

Pre-construction monitoring efforts for Black Sea Bass (BSB) and Channeled Whelk (Whelk) commenced on July 17, 2023 and March 01, 2024, respectively. BSB field surveys concluded June 04, 2025; data analysis and report composition are underway. Whelk monitoring continues as scheduled under the Fisheries Mitigation and Monitoring Plan. The pre-construction resource characterization study of Atlantic Surfclam (Surfclam) is complete and was submitted to VMRC, BOEM, the Bureau of Safety and Environmental Enforcement (BSEE), National Marine Fisheries Service (NMFS), and United States Army Corps of Engineers (USACE) on July 23, 2024 and published on the Project website. Project related activities include sample collection, processing, data analysis, genetic testing, report composition, and collaborative reviews.

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Acronyms and Abbreviations

BiOp	Biological Opinion
BOEM	Bureau of Ocean Energy Management
BSB	Black Sea Bass
CFR	Code of Federal Regulations
COP	Construction and Operations Plan
CVOW	Coastal Virginia Offshore Wind
DVO	Dedicated Visual Observer
ESA	Endangered Species Act
FMMP	Fisheries Mitigation and Monitoring Plan
km	Kilometers
LOA	Letter of Authorization
MOA	Memorandum of Agreement
nm	Nautical miles
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OCS	Outer Continental Shelf
OSW	Offshore wind
PSO	Protected Species Observer
RODA	Responsible Offshore Development Alliance
ROSA	Responsible Offshore Science Alliance
USACE	United States Army Corps of Engineers
VCU	Virginia Commonwealth University
VIMS	Virginia Institute of Marine Science
VMRC	Virginia Marine Resources Commission
VSAP	Vessel Strike Avoidance Plan
WTG	Wind Turbine Generator

1.0 Introduction

Virginia Electric and Power Company, d/b/a Dominion Energy Virginia (Dominion Energy), submits this status report in accordance with the Virginia Marine Resources Commission (VMRC) Protection of Coastal Zone Resources Memorandum of Agreement (MOA) Section B in support of development of the Coastal Virginia Offshore Wind Commercial Project (the Project). This report summarizes implementation of the Fisheries Mitigation and Monitoring Plan (FMMP) as described in the COP Appendix V-2, approved by BOEM on January 28, 2024. This is a semi-annual update to supplement annual reporting under the Bureau of Ocean Energy Management (BOEM) Construction and Operations Plan (COP) Approval Conditions 5.7 and 5.11.8, National Marine Fisheries Service (NMFS) Biological Opinion Term and Condition 5(f), and United States Army Corps of Engineers (USACE) Individual Permit Condition 43.

Dominion Energy has begun construction of the Project in the Outer Continental Shelf (OCS) Lease Area OCS-A 0483 (Lease Area). As shown in Figure 1, the boundary of the Lease Area is located 20.45 nautical miles (nm) (37.87 kilometers [km]) from the northwest corner to the Eastern Shore Peninsula and 23.75 nm (43.99 km) from Virginia Beach, Virginia. The Lease Area itself is 13.0 nm (24.08 km) from the westernmost to easternmost edge, 10.4 nm (19.26 km) from the northernmost to southernmost edge, and 112,799 total acres in size. The Lease Area was designated by BOEM following a review of existing and targeted environmental studies as well as significant stakeholder engagement and input. The specific activities undertaken and considered when designating the location for Lease Area OCS-A 0483 can be reviewed on the BOEM website, BOEM Virginia Activities.

To meet the Project's nameplate capacity of 2,500 to 3,000 megawatts, Dominion Energy will construct, operate, and maintain numerous offshore installations. This includes a total of 176 14.7-megawatt capacity wind turbine generators (WTGs), seven locations identified as spare positions, and three Offshore Substations within the Lease Area. Additional Offshore Project Components include approximately 300 miles of inter-array cables, nine offshore export cables totaling approximately 441 miles in length, and all associated scour and cable protections. As these components are within Virginia state (out to 3 nm from shore) and federal (3 to 200 nm from shore) waters, there are other ocean uses that overlap with Project activities, namely, commercial and recreational fishing. The construction, operation, and maintenance of these components may have impacts on the fisheries resources on which the fishing communities rely.

As described in Guidelines for Providing Information on Fisheries for Renewable Energy Development on the Atlantic Outer Continental Shelf Pursuant to 30 Code of Federal Regulations (CFR) Part 585 (BOEM 2019), BOEM requires that offshore wind developers characterize the existing biological, physical, and socioeconomic resources within a project site and evaluate the potential impacts of project activities to those resources, under 30 CFR 585 Subpart F. BOEM also requires that leaseholders provide strategies to avoid, minimize, and mitigate these potential impacts. Marine fisheries comprise biological, physical, and socioeconomic facets that may be subject to impacts by construction, operations, maintenance, and decommissioning of offshore wind installations, including those of the CVOW Commercial Project. Thus, the FMMP aims to satisfy BOEM's monitoring guidelines by:

1. Identifying fishery-important species in the Offshore Project Area
2. Establishing pre-construction baseline to which future studies can be compared to assess Project related impacts
3. Collecting additional information to reduce uncertainty associated with baseline evaluations and/or to inform the interpretation of research results
4. Developing an approach to quantify changes to fisheries resources associated with proposed Project operations.

Initial investigations and fisheries outreach efforts have resulted in the identification of three commercial fisheries that have reported activity within or proximal to the Lease Area. Black Sea Bass ("BSB") *Centropristis striata*, Channeled Whelk ("Whelk") *Busycotypus canaliculatus*, and Atlantic Surfclam ("Surfclam") *Spisula solidissima* support fisheries conducted in the area by vessels operating out of both regional and Virginia ports. However, Surfclam fishing effort has not been observed within the Lease Area. Given the spatial overlap with traditional fishery uses in the Lease Area, priority efforts are to characterize these fisheries, monitor them through time, and assess the impacts of offshore wind ("OSW") development on the fisheries in this area.

Through funding provided by Dominion Energy and in collaboration with the Virginia Marine Resources Commission (VMRC), the Virginia Institute of Marine Science (VIMS) will conduct pre- and post-construction resource monitoring surveys to characterize population structures of BSB, Whelk, and Surfclam within and around the Lease Area. Virginia commercial fishing industry vessels, crews, and representatives are utilized where practicable. Operations conducted in support of this resource characterization include sample collection, processing, data analysis, genetic testing, report composition, and collaborative review of products.

Implementing best practices and performance tracking are critical to mitigation of ecosystem level impacts, specifically regarding ESA-listed species. Therefore, numerous protective measures are employed by all personnel engaged in project-related fisheries work. These in-water mitigative strategies include but are not limited to use of Dedicated Visual Observers (DVOs) aboard all vessels conducting fisheries monitoring work, vessel speed restrictions, training of crews in proper handling of protected species, use of ropeless (on-demand) fishing gear, and proper documentation and reporting of protected species observations or interactions.

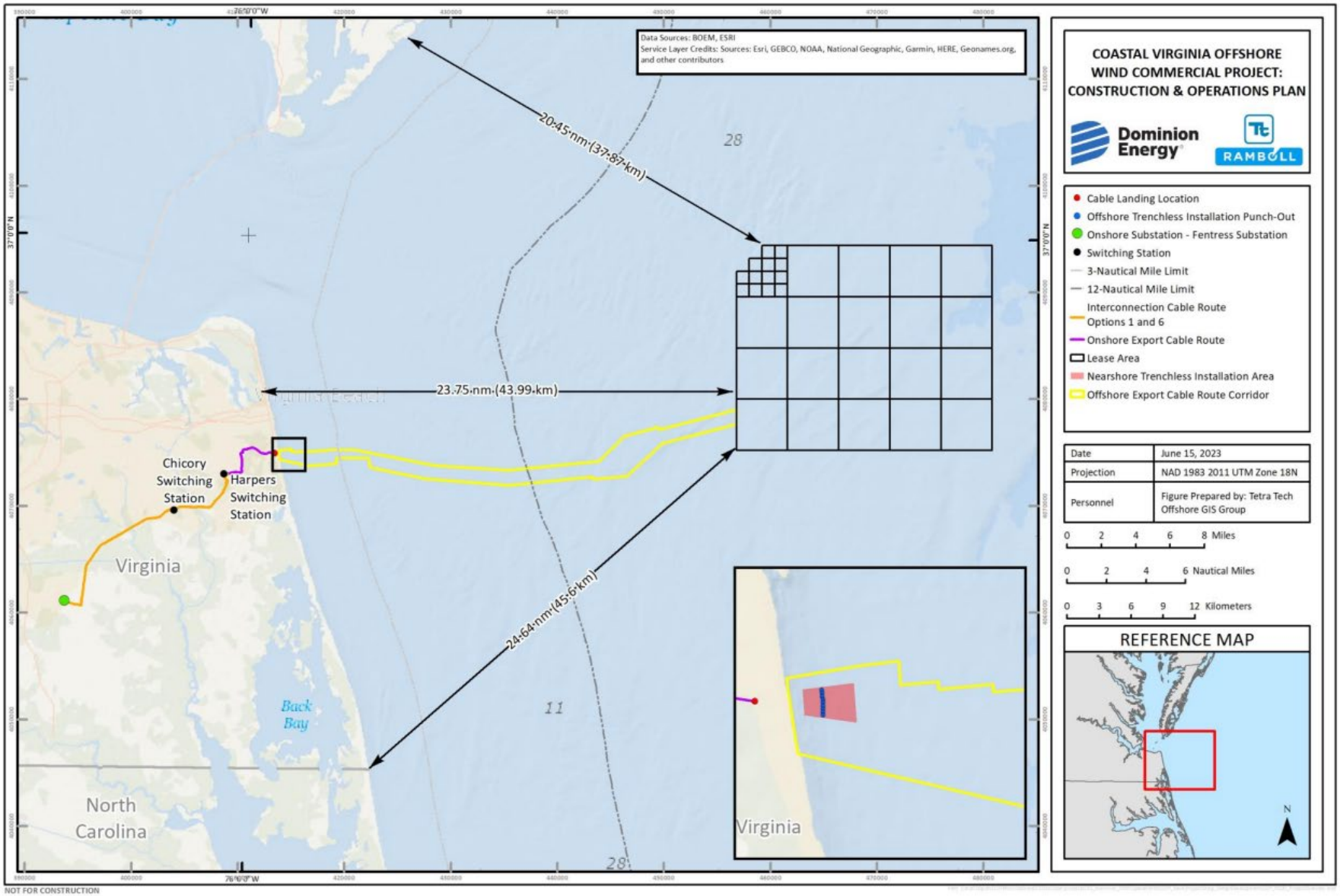

Figure 1. CVOW Commercial Project Overview

1.1 Black Sea Bass

Distributed from the Gulf of Mexico through Florida and northward along the East Coast of the US to the Canadian Maritimes, BSB are a fish in the Serranidae family. Typically associated with complex habitats, BSB annually migrate southward and offshore in the fall and return to northerly, inshore habitats in the spring where they remain through the summer. Spawning varies by region and typically occurs in the late spring, when eggs hatch and develop into larvae, subsequently transitioning into juveniles that settle and inhabit nearshore areas. Most BSB start life as females and switch sexes as they grow (protogynous hermaphrodites). BSB can live up to 10 to 12 years, reach lengths of 24 inches, and weigh up to 9 lbs.

Throughout their range, BSB support a productive commercial fishery, utilizing a variety of gears including hook and line, pots (baited and unbaited), and bottom trawls. In 2020, the U.S. commercial fishery landed approximately 4.3 million pounds with an ex-vessel value of $10.4 million (NOAA/NMFS, 2022). In Virginia during the same year, 521,892 lbs. were landed with an ex-vessel value of $1,079,496 (note that prices were depressed in 2020; nominal annual revenues 2015-2019 averaged $1.9M while landings averaged 595,000 lbs.). As such, BSB represents an important species in VA generally and in the Project site specifically. Cumulative landings reported from the Project site over the period of 2008-2019 were 95,000 lbs. with an estimated value of $353,000 (NMFS, 2021). In addition to a coastwide commercial fishery, BSB also support an extensive hook and line recreational fishery. Coastwide catch estimates for the recreational component were estimated at 9.5 million pounds in 2020, with VA accounting for 796,000 lbs. of landings (NOAA/NMFS, 2022).

1.2 Channeled Whelk

Two species of Busycon Whelks (Channeled Whelk *B. canaliculatus*, and Knobbed Whelk *B. carica*) support a commercial fishery along the Atlantic Coast of the US from Georgia to Massachusetts, with most commercial fishing occurring in Mid-Atlantic and New England regions (Davis and Sisson 1988; Edwards and Harasewych 1988). While Whelk have historically been landed in the region, participation and effort have recently increased due to diminishing opportunities in other fisheries and an increase in market demand (Davis and Sisson 1988; Power et al. 2009; Angell 2018). In 2019, reported landings for the combined New England and Mid-Atlantic regions were 1,078,204 lbs. with an ex-vessel value of $7,863,532 (NOAA/NMFS, 2022). This is likely an underestimate of value as this is a data-poor fishery which is not federally managed and therefore lacks consistent reporting requirements.

The development of offshore wind leases in some cases overlap with traditional Whelk fishing areas and provides an opportunity to focus effort on better understanding these species. Such efforts would provide an opportunity to both characterize the fishery and resource in these areas and assess the impacts of offshore wind development on dependent fishing communities. Interest has been expressed from the fisheries councils and state fisheries managers to participate in creating transferable methods for assessing fisheries as it relates to the development of OSW.

Coordination with those efforts has been integrated into this assessment process to the maximum extent practicable.

1.3 Atlantic Surfclam

The Atlantic Surfclam fishery has been identified as one of the most exposed to impacts from offshore wind energy development (Kirkpatrick et al., 2017). The major Surfclam fishery ports of Atlantic City, NJ and New Bedford, MA have high exposure because they rank among the most valuable Surfclam landing ports in the US based on total revenue derived from the fishery. Surfclam fishing vessels are large and use hydraulic dredges, which has been suggested may limit their ability to safely navigate in and around windfarms (Kirkpatrick et al. 2017). Several of the wind lease areas in the Mid-Atlantic region have significant overlap with active Surfclam fishing grounds (Benjamin et al., 2019; DePiper, 2014). These vulnerabilities underscore the need to include a survey of Surfclam in a comprehensive fishery monitoring plan, at a minimum for leases where overlap exists between fishing activity and wind development.

2.0 In-Water Activity

Monitoring efforts associated with the Fisheries Mitigation and Monitoring Plan require substantial logistical support from partnering organizations and individuals. These operations are necessary for the collection of data to support the research objectives outlined by BOEM and the Responsible Offshore Science Alliance (ROSA) (BOEM 2019, ROSA 2021). Multiple vessels and equipment from across the commercial fishing industry and research institutions are utilized in the data collection processes required by the Project.

The F/V Second to None is a Hustler 45, with a beam of 15 ft, and a draft of 3.5 ft. When involved in the whelk fishery, this vessel typically operates out of Rudee Inlet, Virginia, with a crew size of approximately four people. The F/V Second to None was a more recent acquisition, participating in both the Whelk and Chesapeake Bay Blue crab fisheries. Currently, this vessel is supporting the Project by conducting Whelk surveys.

The F/V Lady Isla is an MDI 37, with a beam of 13 ft, and a draft of 3 ft. When involved in the Whelk fishery, this vessel normally operates in Rudee Inlet and Cape Charles, Virginia, with a crew size around four people. The F/V Lady Isla regularly participates in the Whelk fishery but also participates in the Chesapeake Bay Blue crab fishery and occasionally deploys gillnet gear for species of opportunity. Currently, this vessel is supporting the Project by conducting Whelk surveys.

The F/V Thomas Reed is a Provincial 42, with a beam of 13 ft, and a draft of 3 ft. When participating in the Whelk fishery, this vessel normally operates in Rudee Inlet and Cape Charles, Virginia with a crew size around 4 people. The F/V Thomas Reed also participates in the Chesapeake Bay Blue crab fishery and additional surveillance work for NASA out of Wallops Island. Currently, this vessel is supporting the Project by conducting Whelk surveys.

The F/V Joey D is a 99 ft commercial fishing vessel, built in 2020. This vessel normally operates along the east coast and participates in the clam fishery. The Project garnered support from this vessel in support of the pre-construction Surfclam surveys. A novel dredge was outfitted to this platform to facilitate effective dredge sampling within an offshore wind farm. Sampling protocols used are consistent with those used for other Surfclam surveys conducted by other offshore wind developers and NOAA.

Additionally, the BSB study utilizes the VIMS research vessel R/V Bay Eagle, a 65 ft vessel, with a beam of 18.6 ft, and a draft of 5 ft. Capabilities include dredging, trawling, longlining, and other scientific applications. This vessel operates throughout the Chesapeake Bay and along coastal Virginia, surveying a variety of habitats and ecosystems. Currently, this vessel is supporting the Project by conducting BSB surveys.

Built in 2018, the R/V Virginia is a 93 ft research vessel, with a beam of 28 ft, and a draft of 9 ft. Specifically built for VIMS, the R/V Virginia is easily adaptable to outfit a variety of oceanographic research. This vessel is docked in Weems, Virginia and has participated in surveys from Georgia to Massachusetts, working on whale buoys, deploying AUVs, and completing fisheries monitoring surveys. This vessel began supporting the Project's BSB surveys in 2025.

2.1 Vessel Transits

Vessel transits in support of the Fisheries Mitigation and Monitoring Plan have been on-going since June 2023 and are largely characterized by movement from Chesapeake Bay to the Project Area. F/V Thomas Reed, F/V Second to None, F/V Lady Isla, R/V Virginia, and R/V Bay Eagle conducted in-water fisheries monitoring operations during the current reporting period, totaling 36 transits to/from the Project Area (Table 1). All vessels engaged in work supporting the Project are required to adhere to the Vessel Strike Avoidance Measures outlined in the National Marine Fisheries Service (NMFS) Letter of Authorization ("LOA", NMFS 2024).

Table 1. Vessel transits during fisheries monitoring. *F/V Second to None and Thomas Reed port of origin was Rudee Inlet on June 1; Cape Charles on June 27/29

2025 Fisheries Resource Monitoring	Month	Vessel	Subject	Destination	Port of Origin	Date(s)	Total Transits
	Jan	F/V Thomas Reed	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	21, 23	2
		F/V Lady Isla	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	21, 23	2
		R/V Virginia	BSB	Within Lease and Control Areas	Weems, VA	10, 12	2
	Feb	F/V Thomas Reed	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	24, 26	2
		F/V Second to None	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	24, 26	2
		R/V Virginia	BSB	Within Lease and Control Areas	Weems, VA	3, 5	2
		R/V Bay Eagle	BSB	Within Lease and Control Areas	Gloucester Point, VA	28	1
	Mar	F/V Thomas Reed	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	23, 25	2
		F/V Second to None	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	23, 25	2
		R/V Bay Eagle	BSB	Within Lease and Control Areas	Gloucester Point, VA	3	1
	Apr	F/V Thomas Reed	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	26, 28	2
		F/V Second to None	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	26, 28	2
		R/V Bay Eagle	BSB	Within Lease and Control Areas	Gloucester Point, VA	21, 23	2
	May	F/V Thomas Reed	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	30	1
		F/V Second to None	Whelk	Within Lease and Control Areas	Rudee Inlet, VA	30	1
		R/V Bay Eagle	BSB	Within Lease and Control Areas	Gloucester Point, VA	12, 15	2
	Jun	F/V Thomas Reed	Whelk	Within Lease and Control Areas	*Rudee Inlet/Cape Charles, VA	1, 27, 29	3
		F/V Second to None	Whelk	Within Lease and Control Areas	*Rudee Inlet/Cape Charles, VA	1, 27, 29	3
		R/V Bay Eagle	BSB	Within Lease and Control Areas	Gloucester Point, VA	2, 4	2

2.2 ESA Observations

DVOs are assigned to monitor for protected and endangered species during in-water project support to ensure project related activities will not negatively affect or interact with protected species. Additionally, all interactions or observations are recorded and reported. There were no ESA-listed species observations during the current reporting period (Table 2). Requirements for PSOs, DVOs, and ESA-listed species observation protocols are outlined in the Vessel Strike Avoidance Measures of the LOA and in the NMFS Biological Opinion ("BiOp") (NMFS 2024 and NMFS 2023).

Table 2. ESA-listed species observations during fisheries monitoring

2025 ESA-Listed Species Observations : Fisheries Resource Monitoring							
Date | Time (DD-MM-YYYY) | HHMM	Subject	Vessel | Observation Platform	Speed (kts)	Sighting ID (Lowest practicable taxon)	Initial Detection Distance	Bearing to Animal	Previously reported (Y/N) If Y: date of submittal
There were no observations during this reporting period							

2.3 Gear Deployments

Gear deployments in support of the Fisheries Mitigation and Monitoring Plan have been on-going since June 2023 and are conducted in and around the Project Area, to include nearby control areas. F/V Thomas Reed, F/V Second to None, F/V Lady Isla, R/V Virginia, and R/V Bay Eagle have been utilized for gear deployment throughout the current reporting period. A total of 1,021 pots were deployed and recovered during this time (Table 3).

Table 3. Gear deployments during fisheries monitoring

2025 Fisheries Resource Monitoring	Deployed (dd-mm-yyyy)	Recovered (dd-mm-yyyy)	General Location	Gear Deployed (# or instances)
	10-01-2025	12-01-2025	Within Lease and Control Areas	48
	21-01-2025	23-01-2025	Within Lease and Control Areas	112
	03-02-2025	05-02-2025	Within Lease and Control Areas	47
	24-02-2025	26-02-2025	Within Lease and Control Areas	126
	28-02-2025	03-03-2025	Within Lease and Control Areas	48
	23-03-2025	25-03-2025	Within Lease and Control Areas	126
	21-04-2025	23-04-2025	Within Lease and Control Areas	48
	26-04-2025	28-04-2025	Within Lease and Control Areas	126
	12-05-2025	15-05-2025	Within Lease and Control Areas	48
	30-05-2025	01-06-2025	Within Lease and Control Areas	126
	02-06-2025	04-06-2025	Within Lease and Control Areas	40
	27-06-2025	29-06-2025	Within Lease and Control Areas	126

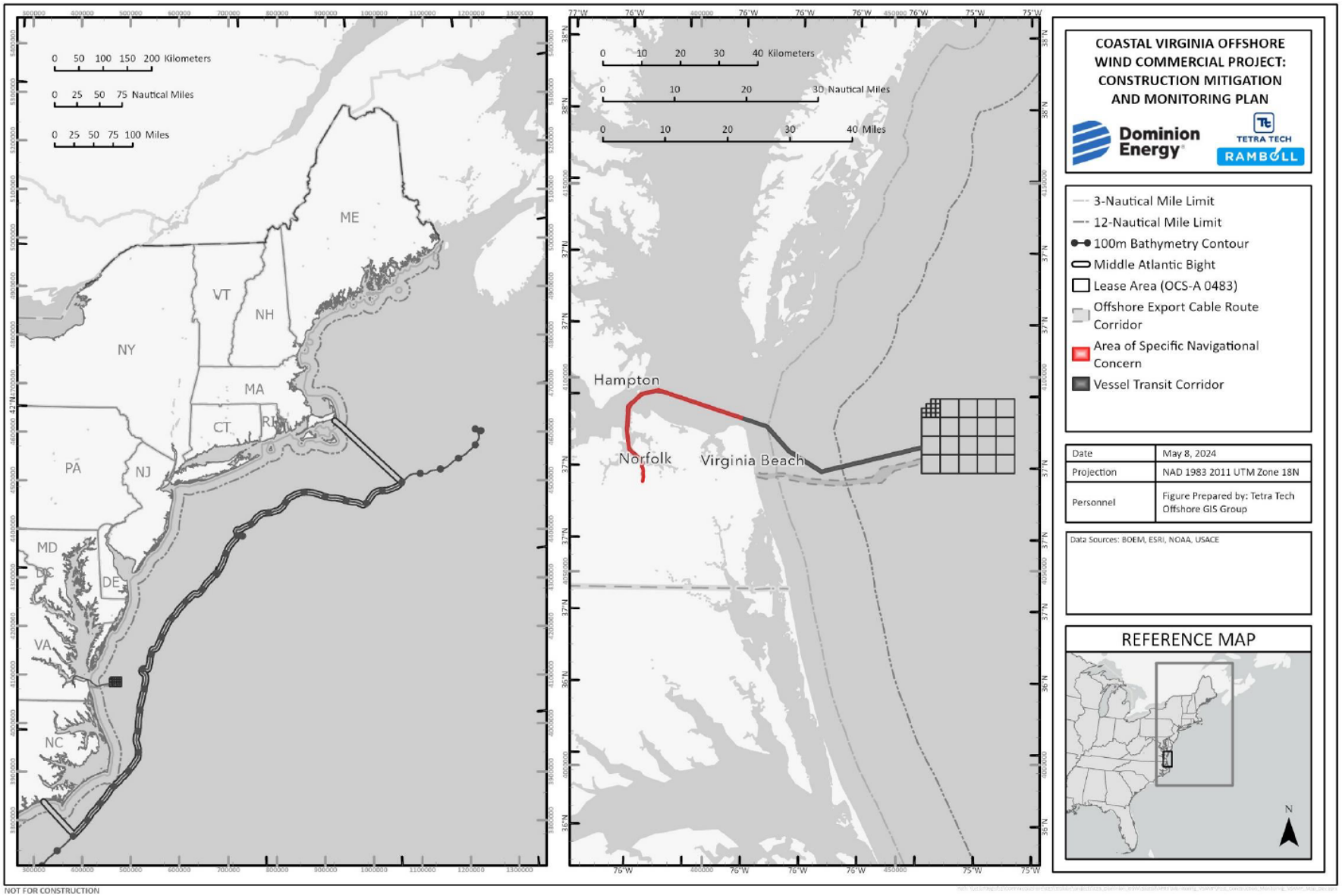

Figure 2. Spatial delineation of vessel speed restrictions in vicinity of CVOW Lease Area OCS-0483

3.0 Sampling, Analysis, and Reporting

The objective of these studies is to exercise a sampling framework to effectively characterize pre- and post-construction fishery community structure in and around the Project Area with a focus on BSB, Whelk, and Surfclam. BOEM has developed guidelines for providing information on fisheries for offshore wind projects (BOEM 2019, BOEM 2025). Additionally, ROSA has developed a guidance document that offers overarching principles and recommended elements for experimental protocols in the design and implementation of offshore wind monitoring projects (ROSA, 2021). Collectively, these guidelines were considered in the development of the experimental framework for the studies, namely: 1) reviewing existing scientific data; 2) using standardized methods and established protocols; and 3) assessing changes to baseline biological and relevant environmental conditions. With respect to protocols and resulting data streams from the monitoring plan, ROSA recommended: 1) estimating indices of abundance and occurrence; 2) characterizing demographics of fisheries resources; 3) describing environmental conditions; and 4) depicting bottom type/benthic habitat. Through these fishery monitoring surveys, we anticipate collecting the recommended data products (1-4).

Surveys collect baseline information relevant to the fisheries operating in the lease area as well as establish the foundation for potential future fishery monitoring programs to evaluate potential impacts on the fishery resources and directed commercial fishery in the Project Area. Fishery monitoring surveys are conducted with greatest sampling effort coinciding with highest commercial effort. Monitoring surveys are expected to consist of six scientific studies as follows:

- Two years of pre-construction data for BSB
- Two years of pre-construction data for Whelk
- One pre-construction sampling event for Surfclam
- Three years of post-construction monitoring for BSB between years 2 and 4 of operations
- Three years of post-construction monitoring for Whelk between years 2 and 4 of operations
- Two post-construction sampling events for Surfclam between years 2 and 3 of operations

This work involves collaboration with a suite of project partners (commercial fishers, Dominion Energy, VIMS, and VMRC). The cooperative nature of this scope of work is critical to the success of the project as the collective expertise and understanding of the area and the resources contained therein is vital. This expertise is utilized to the maximum extent possible in all aspects of the work.

3.1 Fisheries Monitoring

Pre-construction BSB monitoring surveys began on July 17, 2023 and concluded June 04, 2025. A total of 21 surveys were completed, 3,327 BSB were caught and measured, and approximately 1130 specimens were retained for biological sampling throughout the pre-construction monitoring study. Otoliths, stomach contents, gonads, and scales have been collected from each specimen for analysis. Video recorders are attached to buoy pots to observe bottom type. Water temperature loggers take readings every 10 minutes throughout gear deployment.

Pre-construction Whelk monitoring surveys began on March 01, 2024 and are expected to continue for 2 years, prior to and during construction. As of June 30, 2025, 17 surveys have been completed, 2,192 channeled Whelk have been caught and measured, with approximately 300 specimens retained for biological sampling throughout the entire pre-construction monitoring study. Whelk dissections are underway where data on sex, maturity, age, and various morphological information will be collected for analysis.

Pre-construction Surfclam resource characterization sample collection was completed on June 18, 2023 by F/V Joey D utilizing a newly designed hydraulic sampling dredge. Samples were brought to VIMS for age and growth analysis while biometric and allometric data were compiled and analyzed by VIMS and Rutgers University researchers. Preliminary findings were provided to Sea Risk Solutions and Dominion Energy on May 1, 2024. A finalized report, dated June 18, 2024, was submitted to Dominion Energy on June 19, 2024. This submittal was provided to VMRC, BOEM, BSEE, NMFS, and USACE on July 23, 2024 and subsequently published to Dominion Energy's CVOW website.

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